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**A New Species of the Genus *Spherillo* (Crustacea:Isopoda)
from Hahajima, Bonin Islands, Southern Japan***

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小笠原諸島母島の淡水域から発見された陸産等脚目甲殻類の1新種

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2007年3月1日、母島の乳房ダムでの調査時に、ダム湖岸の水中、アカギの根茎からコシビロダンゴムシが採集された。本種は *Spherillo* 属の新種であり、*S. hahajimensis* として記載した。本種は *S. tomiyamai* と類似するが、顎脚の形態が特異であること、体色が薄いこと、体が比較的長いこと、胸肢上の剛毛に3つに分岐するタイプのものがあるものの数が少ないことなどによって区別される。本種のホロタイプは富山市科学博物館 (TOYA Cr-13616) に保管される。本種はダム湖の水中にあるアカギの根茎から採集されたが、*Spherillo* 属からは水生の種は報告されておらず、本来は陸生の種が水位の上昇に伴ってアカギの根茎に取り残されたものではないかと考えられる。また調査時には他の5地点から確認されておらず、採集地点は通常は地表流が認められないが、降水が多いときには地表流ができると想定される谷地形に存在する。陸生の等脚目甲殻類は一般に水中でもしばらく耐えられるとされているが、本種は水中生活により適応している特徴を持っている可能性がある。

キーワード：等脚類、コシビロダンゴムシ、小笠原、新種、分類学

Key words : Isopod, Bonin Islands, new species, taxonomy, *Spherillo hahajimensis*

During an ecological survey in a dam reservoir of Haha-jima on 1 March, 2007, the second and third authors found some strange pill bugs in submerged root masses of a tree, *Bischofia javanica*. The specimens were sent to the first author. As the result of his closer examinations, this species represented a new species of the genus *Spherillo*.

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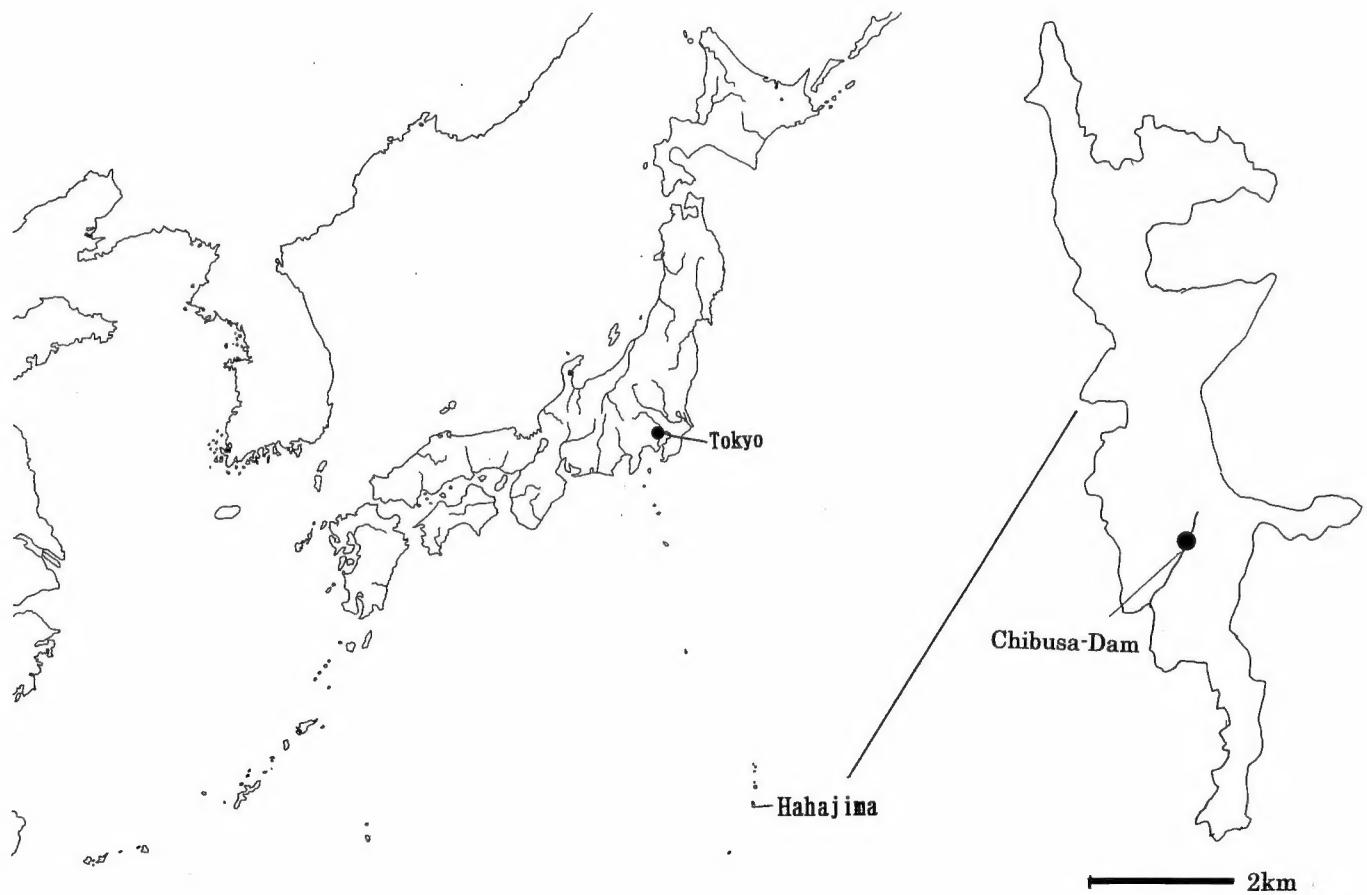


Fig.1 Map showing the sampling sites.

Spherillo hahajimensis Nunomura sp.nov.

(Japanese name: Hahajima-koshibiro-dangomushi, new)

(Figs.1-4)

Materials examined: 5 ♂♂ (1♂ holotype, 4.4 mm in body length and 4♂♂ paratypes, 3.0-4.1 mm in body length) and 7 ♀♀ (1♀ allotype 5.2 mm in body length and 6♀♀ paratypes, 2.5-4.6 mm in body length), from the submerged root masses of a tree in the Chibusa Dam, Reservoir, Hahajima, Bonin Islands, March 1, 2007, coll. R. Ueno and K. Satake. Type series is deposited as follows: holotype (TOYA Cr-13616), allotype (TOYA Cr-13617) and 4 paratypes (TOYA Cr-13618~13621) at Toyama Science Museum; 3 paratypes (NSMT Cr-17976) at National Museum of Nature and Science, Tokyo and 3 paratypes (OMNH Ar-7608) at the Osaka Museum of Natural History.

Description: Body 2.5 times as long as wide. Color brown with many regular paler patterns. Eyes small, each eyes composed of 20 ommatidia. Ventral side of pereonal somite 1 with a pair of big and deep groove. Ventral side of pereonal somite 2 with relatively narrow schisma. Pleotelson (Fig. 2F) hour-grass-shaped.

Antennule (Fig. 2D): three-segmented; terminal segment with 4 aesthacs at the tip. Antenna (Fig. 2E): flagellum 2-segmented, terminal segment 2.5 times longer than the basal one.

Right mandible (Fig. 2G): pars incisiva 3-headed: lacinia mobiles not chitinized. Left mandible (Fig. 2H): pars incisiva 3-headed: lacinia mobiles chitinized and 3-headed; 2 pencils; processus molaris represent by a seta. Maxillula (Fig. 2I): endopod; exopod with 10 relatively long simple setae. Maxilla (Fig. 2J): rectangular. Maxilliped (Fig. 2K): endite rectangular, with 2 spurs and 2 setae on distal area; outer margin serrate, with 7-9 teeth on outer margin. Palp slender, with a tuft of setae at the tip.

Pereopod 1 (Fig. 3A): basis 3.8 times as long as wide, with 12-14 setae on inner margin and 8-10 setae on outer margin; ischium 0.55 time as long as basis, with 7-8 setae on inner margin and a few of setae on outer margin; merus

0.6 times as long as ischium, with 6 setae including a relatively long one on inner margin and 10 setae on outer margin; carpus a little longer than merus, with 11-12 setae including a saw-like one, 2 bifid ones, 5-6 setae on outer margin and many setae on lateral surface; propodus 1.3 times longer than carpus, with 8-10 short setae on inner half and 4 setae on distal half of inner margin and 11-12 setae on outer margin.

Pereopod 2 (Fig. 3B): a little longer than pereopod 1: basis 3.6 times as long as wide; ischium half the length of basis, with 3 setae on inner margin; merus a little shorter than ischium, with 4 setae on inner margin and 3-4 setae on outer margin; carpus 1.5 times longer than merus, with 3 long setae on inner margin; propodus 1.2 times longer than carpus, with 4-5 relatively long setae on inner margin.

Pereopod 3 (Fig. 3C): basis 4.0 times as long as wide, with 5-7 setae on inner margin and 10-12 setae on outer margin; ischium 0.6 times as long as wide, with 2-3 short setae on both margins; merus ischium 0.6 times as long as wide; carpus 1.4 times longer than carpus; propodus 1.15 times longer than carpus, with 5 long setae on inner margin and 9 setae on outer margin.

Pereopod 4 (Fig. 3D): basis 3.6 times as long as wide, with 11-12 setae on inner margin and; ischium half the length of basis, with 5-6 setae on inner margin; merus 0.6 times as long as ischium, with 6-7 setae including a long

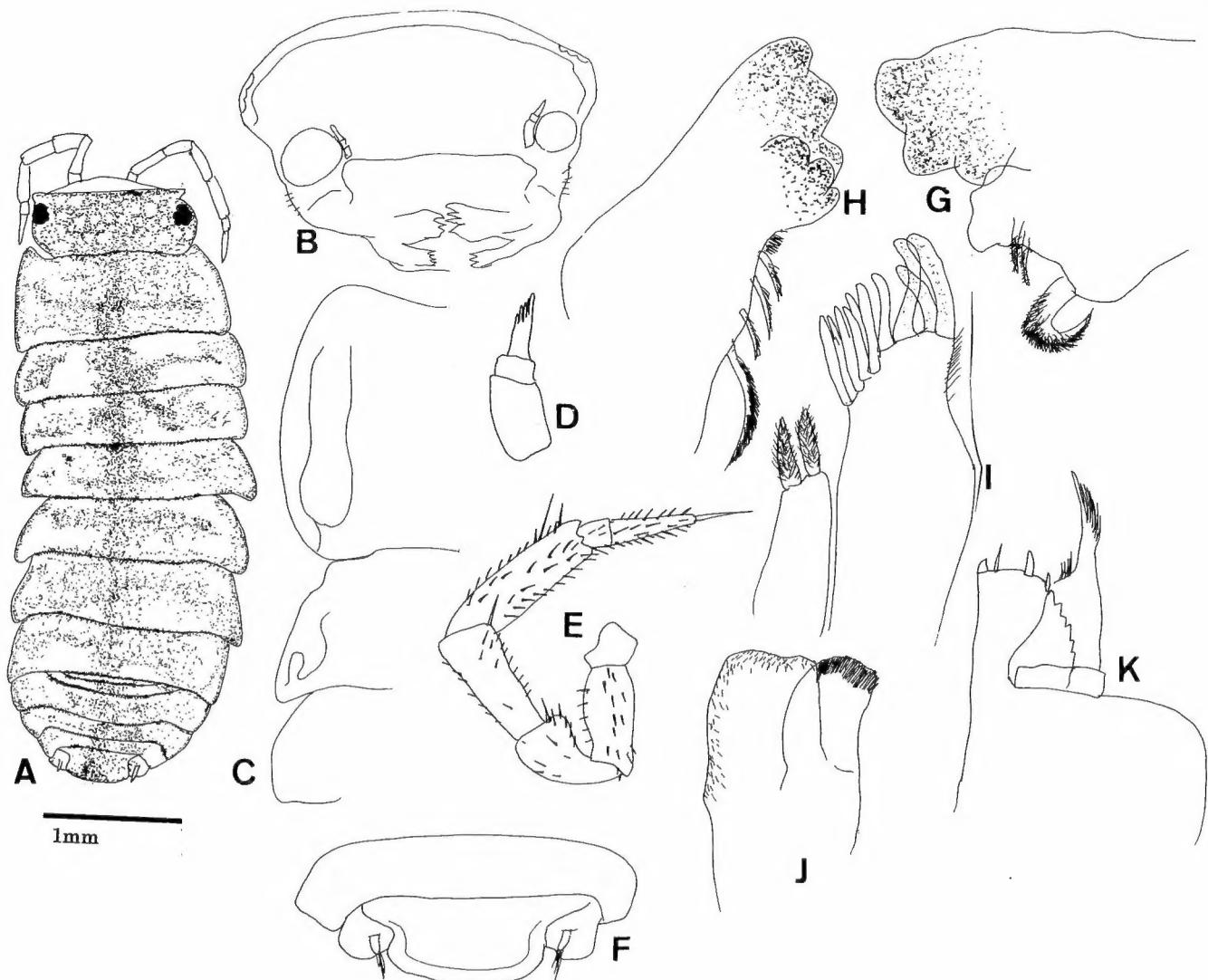


Fig. 2 *Spherillo hahajimensis* sp.nov.

A: Dorsal view; B: Anterior view of cephalon; C: Ventral view of pereonal somites 1-3; D: Antennule; E: Antenna; F: Pleotelson; G: Right mandible; H: Left mandible; I: Maxillula; J: Maxilla; K: Maxilliped (All: male holotype).

one on inner margin; carpus 1.6 times longer than merus, with 5-6 setae including a long one on inner margin; propodus with 7-8 setae on inner margin including 2 long ones on inner margin.

Pereopod 5 (Fig. 3E): basis 3.4 times as long as wide, with some short setae on inner margin and 7-8 setae on outer margin; ischium half the length of basis, with 10-11 setae on inner margin and several setae on outer area; merus a little shorter than ischium, with 6-8 setae on inner margin and 5-6 setae on outer margin; carpus a little longer than merus, with 5 teeth on inner margin; propodus 1.25 times longer than carpus, with 6 setae on basal half of inner margin and 13-16 setae on outer margin.

Pereopod 6 (Fig. 3F): basis 2.9 times as long as wide; ischium 0.45 times as long as basis, with a seta at outer distal angle; merus 0.65 times as long as ischium, with 2 relatively long setae on inner margin, setae on distal margin and setae on outer margin; carpus 1.3 times longer than merus, with 3 long setae on inner margin and 6-7 setae on outer margin; propodus 1.3 times longer than carpus, with setae on inner margin and setae on outer margin.

Pereopod 7 (Fig. 3G): basis 3.2 times as long as wide, with 8-10 setae on both margins; ischium 0.45 times as long as basis, with 10-12 setae on inner margin and 2 setae at outer distal area; merus 0.9 times as long as ischium,

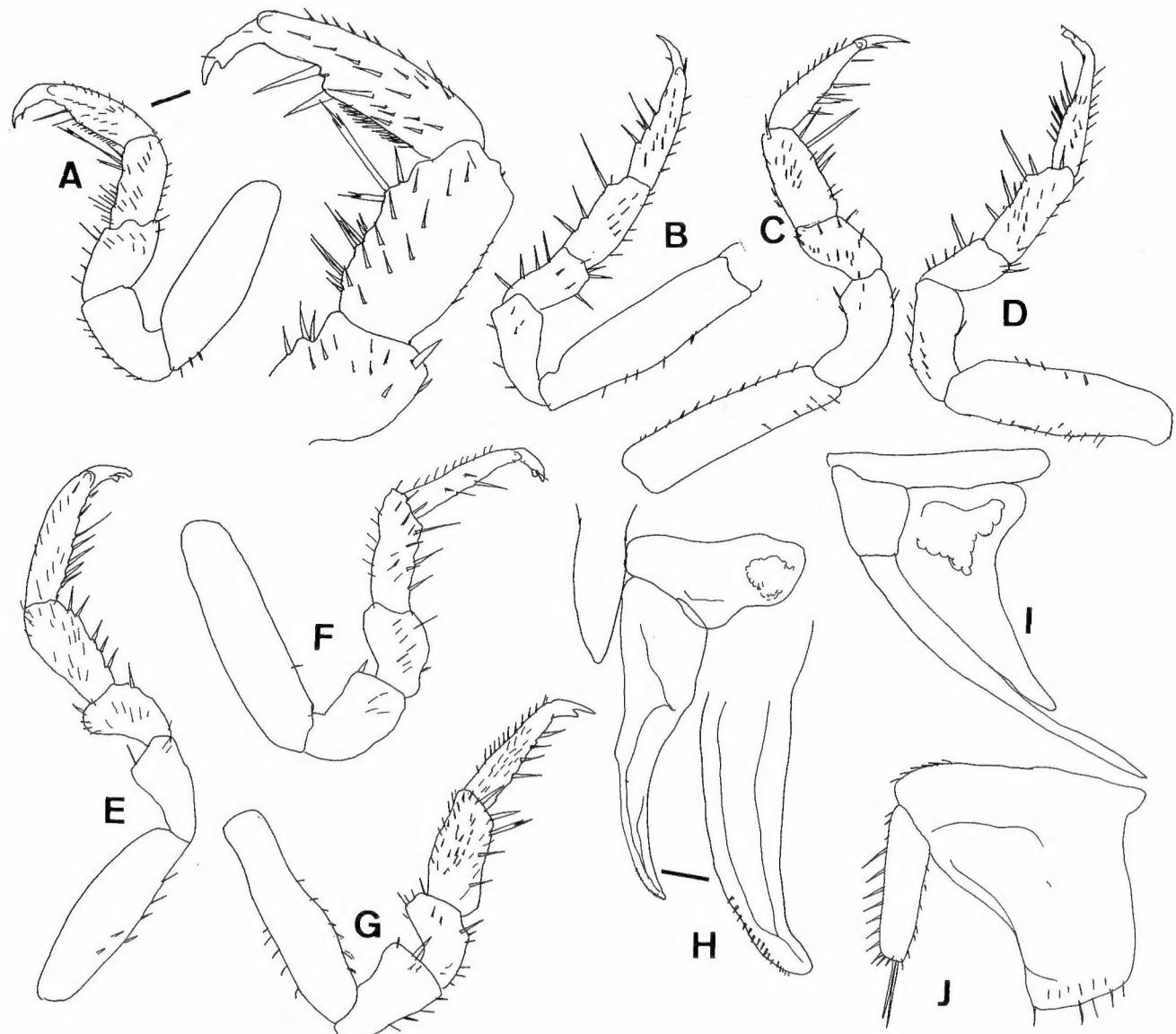


Fig.3 *Spherillo hahajimensis* sp.nov.

A-G: Pereopods 1-7; H:Penes and pleopod 1; I:Pleopod 2; J:Uropod. (All: male holotype).



Fig.4 Environments of type locality.

with 9-10 setae on inner margin; carpus 1.6 times longer than merus, with 13-15 setae including a long bifid one on inner margin and many setae on outer margin and lateral area; propodus 1.35 times longer than carpus, with 6 setae and a few of short setae on inner margin and 11-12 short setae on outer margin.

Penes (Fig. 3H): fusiform.

Pleopod 1 (Fig. 3H): basis pentagonal; endopod with a series of 15-16 denticles; exopod triangular.

Pleopod 2 (Fig 3I): basis short; endopod long, exceeding far beyond exopod; exopod triangular, with a shallow concavity.

Uropod as Fig. 3J.

Female: Roughly similar to male except for copulatory apparatus.

Etymology: Hahajima is a name of island where the type series was collected.

Habitat: This new species was collected from the submerged root masses of a riparian vegetation of the Chibusadam reservoir. But in this reservoir the water level tends to fluctuate depending on the amount of precipitation. Environment factors of the sampling site were measured in 28, Feb. 2007.

Water temperature: 19.5°C

Electric conductivity: 0.539mS/cm

Dissolved oxygen: 8.8mg/l

PH: 7.52

Though many terrestrial isopods can survive in the water for relatively long time, it is rather unique that many individuals are surviving in the water, because all the isopods of the genus *Spherillo* are known as terrestrial species (Schotte et al, 1995). At present, it is difficult to judge whether this species adapted to aquatic habitat or not.

Remarks: The present new species is most closely allied to *S. tomiyamai* recorded from Nakoudo-jima Island (Nunomura, 1991), Bonin Islands but the former is separated from the latter in the following features; (1) stronger serrated posterior margin of maxillipedal endite, (2) fewer trifid setae on pereopods, (3) paler color, (4) longer body and (5) fewer spinules on male first pleopod.

The present new species is also separated from *S. boninensis* (Nunomura, 1990), described from Chichi-jima Island of the Bonin Island, but separated, in the following features; (1) presence of serrated posterior margin of maxillipedal endite, (2) presence of trifid setae on pereopods, (3) paler color, (4) longer body, (5) longer endopod of male second pleopod, (6) fewer spinule on male first pleopod, (7) numerous aesthetascs on antennule and (8) rectangular exopod of male first pleopod.

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